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<110> THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE  
PEDERSEN, Peter L.  
MATHUPALA, Saroj P.

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<150> US 60/189,222

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<212> DNA
<213> Artificial sequence

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<220>
<223> Forward primer

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28

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&lt;213&gt; Rattus norvegicus

&lt;400&gt; 10

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1           5           10           15
Asn Gln Val Gln Lys Val Asp Gln Phe Leu Tyr His Met Arg Leu Ser
          20           25           30
Asp Glu Thr Leu Leu Glu Ile Ser Arg Arg Phe Arg Lys Glu Met Glu
          35           40           45
Lys Gly Leu Gly Ala Thr Thr His Pro Thr Ala Ala Val Lys Met Leu
          50           55           60
Pro Thr Phe Val Arg Ser Thr Pro Asp Gly Thr Glu His Gly Glu Phe
65           70           75           80
Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Arg Val Arg
          85           90           95
Val Thr Asp Asn Gly Leu Gln Arg Val Glu Met Glu Asn Gln Ile Tyr
          100          105          110
Ala Ile Leu Glu Asp Ile Met Arg Gly Ser Gly Thr Gln Leu Phe Asp
          115          120          125
His Ile Ala Glu Cys Leu Ala Asn Phe Met Asp Lys Leu Gln Ile Lys
          130          135          140
Glu Lys Lys Leu Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys His Gln
145          150          155          160
Thr Lys Leu Asp Glu Ser Phe Leu Val Ser Trp Thr Lys Gly Phe Lys
          165          170          175
Ser Ser Gly Val Glu Gly Arg Asp Val Val Asp Leu Ile Arg Lys Val
          180          185          190
Ile Gln Arg Arg Gly Asp Phe Asp Ile Asp Ile Val Ala Val Val Asn
          195          200          205
Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Asp Asp Gln Asn Cys
          210          215          220
Glu Ile Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met Glu
225          230          235          240
Glu Met Arg His Ile Asp Met Val Glu Gly Asp Glu Gly Arg Met Cys
          245          250          255
Ile Asn Met Glu Trp Gly Ala Phe Gly Asp Asp Gly Thr Leu Asn Asp
          260          265          270
Ile Arg Thr Glu Phe Asp Arg Glu Ile Asp Met Gly Ser Leu Asn Pro
          275          280          285
Gly Lys Gln Leu Phe Glu Lys Met Ile Ser Gly Met Tyr Met Gly Glu
          290          295          300

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Leu Val Arg Leu Ile Leu Val Lys Met Ala Lys Ala Glu Leu Leu Phe  
 305 310 315 320  
 Gln Gly Lys Leu Ser Pro Glu Leu Leu Thr Thr Gly Ser Phe Glu Thr  
 325 330 335  
 Lys Asp Val Ser Asp Ile Glu Glu Asp Lys Asp Gly Ile Glu Lys Ala  
 340 345 350  
 Tyr Gln Ile Leu Met Arg Leu Gly Leu Asn Pro Leu Gln Glu Asp Cys  
 355 360 365  
 Val Ala Thr His Arg Ile Cys Gln Ile Val Ser Thr Arg Ser Ala Ser  
 370 375 380  
 Leu Cys Ala Ala Thr Leu Ala Ala Val Leu Trp Arg Ile Lys Glu Asn  
 385 390 395 400  
 Lys Gly Glu Glu Arg Leu Arg Ser Thr Ile Gly Val Asp Gly Ser Val  
 405 410 415  
 Tyr Lys Lys His Pro His Phe Ala Lys Arg Leu His Lys Ala Val Arg  
 420 425 430  
 Arg Leu Val Pro Asp Cys Asp Val Arg Phe Leu Arg Ser Glu Asp Gly  
 435 440 445  
 Ser Gly Lys Gly Ala Ala Met Val Thr Ala Val Ala Tyr Arg Leu Ala  
 450 455 460  
 Asp Gln His Arg Ala Arg Gln Lys Thr Leu Glu Ser Leu Lys Leu Ser  
 465 470 475 480  
 His Glu Gln Leu Leu Glu Val Lys Arg Arg Met Lys Val Glu Met Glu  
 485 490 495  
 Gln Gly Leu Ser Lys Glu Thr His Ala Val Ala Pro Val Lys Met Leu  
 500 505 510  
 Pro Thr Tyr Val Cys Ala Thr Pro Asp Gly Thr Glu Lys Gly Asp Phe  
 515 520 525  
 Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Leu Val Arg  
 530 535 540  
 Val Arg Asn Gly Lys Arg Arg Gly Val Glu Met His Asn Lys Ile Tyr  
 545 550 555 560  
 Ser Ile Pro Gln Glu Val Met His Gly Thr Gly Glu Glu Leu Phe Asp  
 565 570 575  
 His Ile Val Gln Cys Ile Ala Asp Phe Leu Glu Tyr Met Gly Met Lys  
 580 585 590  
 Gly Val Ser Leu Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys Gln Gln  
 595 600 605  
 Asn Ser Leu Asp Gln Ser Ile Leu Leu Lys Trp Thr Lys Gly Phe Lys  
 610 615 620  
 Ala Ser Gly Cys Glu Gly Glu Asp Val Val Thr Leu Leu Lys Glu Ala

625		630		635		640
Ile His Arg Arg	Glu Glu Phe Asp Leu Asp	Val Val Ala Val Val Asn				
	645		650			655
Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Glu Asp Pro His Cys						
	660		665			670
Glu Val Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met Glu						
	675		680			685
Glu Met Arg Asn Val Glu Leu Val Asp Gly Glu Glu Gly Arg Met Cys						
	690		695			700
Val Asn Met Glu Trp Gly Ala Phe Gly Asp Asn Gly Cys Leu Asp Asp						
705		710		715		720
Leu Arg Thr Val Phe Asp Val Ala Val Asp Glu Leu Ser Leu Asn Pro						
	725		730			735
Gly Lys Gln Arg Phe Glu Lys Met Ile Ser Gly Met Tyr Leu Gly Glu						
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Ile Val Arg Asn Ile Leu Ile Asp Phe Thr Lys Arg Gly Leu Leu Phe						
	755		760			765
Arg Gly Arg Ile Ser Glu Arg Leu Lys Thr Arg Gly Ile Ser Glu Thr						
	770		775			780
Lys Phe Leu Ser Gln Ile Glu Ser Asp Cys Leu Ala Leu Leu Gln Val						
785		790		795		800
Arg Ala Ile Leu Arg His Leu Gly Leu Glu Ser Thr Cys Asp Asp Ser						
	805		810			815
Ile Ile Val Lys Glu Val Cys Thr Val Val Ala Arg Arg Ala Ala Gln						
	820		825			830
Leu Cys Gly Ala Gly Met Ala Ala Val Val Asp Lys Ile Arg Glu Asn						
	835		840			845
Arg Gly Leu Asp Asn Pro Lys Val Thr Val Gly Val Asp Gly Thr Leu						
	850		855			860
Tyr Lys Leu His Pro His Phe Ala Lys Val Met His Glu Thr Val Arg						
865		870		875		880
Asp Leu Ala Pro Lys Cys Asp Val Ser Phe Leu Glu Ser Glu Asp Gly						
	885		890			895
Ser Gly Lys Gly Ala Ala Leu Ile Thr Ala Val Ala Cys Arg Ile Arg						
	900		905			910
Glu Ala Gly Gln Arg						
	915					